



PROPOSED PLAN *for Marine Corps Air Station El Toro*

June 1997

Marine Corps Proposes No Further Action at Eleven Sites

This Proposed Plan provides an overview of the environmental investigation results for Installation Restoration Program (IRP) Sites 4, 6, 9, 10, 13, 15, 19, 20, 21, 22, and 25 at MCAS El Toro. It also presents the Marine Corps' proposal for no cleanup action for these eleven IRP sites and a discussion of the basis for this proposal. We invite you to review and give us your input on this Plan during the official public comment period from June 16 to August 16, 1997. You may submit your written comments to us and we will consider them in reaching our final cleanup decision. (Please see box below for details.)

The determination that no cleanup action is required at these eleven sites is based on the results of extensive field investigations, laboratory analyses, and a thorough assessment of potential human health risks at each location and of potential ecological risks at Site 25. The MCAS El Toro Base Realignment and Closure (BRAC) Cleanup Team, made up of representatives from the Marine Corps, U.S. Environmental Protection Agency (U.S. EPA), and California Environmental Protection Agency (Cal-EPA), has carefully evaluated the remedial investigation results. The team has determined that no cleanup action is necessary at the sites since the risk levels fall within U.S. EPA's range of acceptable risks for protection of human health and the environment. The reports describing the field investigations, laboratory analyses, and risk assessments are part of the MCAS El Toro IRP Administrative Record, which is available to the public at the Heritage Park Regional Library in Irvine.

No Further Action Proposal

Since there are no significant human health risks for Sites 4, 6, 9, 10, 13, 15, 19, 20, 21, 22, and 25, the Marine Corps is proposing that no additional investigation or cleanup action be taken at these sites. The Marine Corps also considered all of the investigation and historical information from these sites in making this proposal (this information comprises the Administrative Record for these sites). Federal and state environmental laws and regulations, including the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), state that a No Further Action decision is warranted for sites that do not pose a current or potential risk to human health or the environment. Under the No Further Action determination, the Marine Corps would not require any land use restrictions for the sites.

Opportunities for Community Involvement

Public Meeting

Thursday, July 31, 1997 4:30-8:30 p.m.

Irvine City Hall, Conference and Training Center, Harvard at Alton Parkway, Irvine

You are invited to this meeting to discuss the information presented in this Proposed Plan for no cleanup action at Sites 4, 6, 9, 10, 13, 15, 19, 20, 21, 22, and 25 at MCAS El Toro. Marine Corps representatives will provide visual displays and information on the environmental investigations and the no cleanup action proposal.

Public Comment Period

June 16 – August 16, 1997

We encourage you to comment on this Proposed Plan and other site-related documents during the 60-day public comment period. Please note that the standard 30-day comment period has been extended to 60 days at the request of the public. Comments may be submitted orally or in writing at the public meeting, or you can mail written comments **postmarked no later than August 16, 1997** to: Mr. Joseph Joyce, Base Realignment and Closure (BRAC) Environmental Coordinator, AC/S Environment (1AU), MCAS El Toro, P.O. Box 95001, Santa Ana, CA 92709-5001 or MCAS El Toro, Building T-2010, Santa Ana, CA 92709-5001. Comments may also be faxed to (714) 726-6586. Public comments received during this period will be considered in the final determination for the sites.

Environmental Investigation Summary

This Proposed Plan presents a brief description of the conditions at each of the eleven sites, the results of the human health risk assessment for each site, and the ecological risk assessment at Site 25. (See Figure 1, insert page, for the location of the eleven sites.) The sites were identified through a series of environmental studies and evaluations that examined past use of hazardous substances at MCAS El Toro, including fuels, oils, and solvents. Waste management practices at these sites were changed many years ago. Groundwater is generally not encountered until a depth of 100 feet or more below the ground surface; therefore it has not been impacted at each site.

To better understand the site-specific descriptions and risk values presented below, please read the Human Health and Ecological Risk Assessment discussion in the shaded box to the right.

The human health risk values used to determine no cleanup action for the sites addressed in this Proposed Plan were based on the assumption of future residential use of the property for a period of 30 years. This assumption was used by the Marine Corps to provide a conservative estimate of potential future risk.

It was determined that there are no significant surface water quality or environmental impacts resulting from past operations at the eleven sites. Habitat surveys were performed at the sites and it was concluded that there are no suitable wildlife habitats present at the sites with the exception of Site 25. An ecological risk assessment at Site 25 was conducted, and the results are summarized below.

Throughout this Proposed Plan, the term background levels (of chemicals) is used. It refers to the naturally occurring range of chemicals that are found in the native soil both on and off MCAS El Toro property (in the vicinity of the Station). These background levels have not been impacted by Station operations.

For the definitions of chemical terms discussed in this Proposed Plan, see the enclosed insert page.

Site 4 – Ferrocene Spill Area

This site is comprised of a fuel-stained area and a drainage ditch with a catch basin. Five gallons of a liquid containing an aircraft fuel additive called “ferrocene” were spilled onto the ground in 1983. Soil contaminants reported at the site include volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), pesticides, and metals.

Based on the risk calculations, this site does not pose a significant human health risk. The cancer risk calculated for this site is considered generally acceptable by the U.S. EPA, and, therefore, no cleanup action is proposed. Potential cancer risks, for residents exposed to the soil at the site over 30 years, do not exceed 4 additional cases per 100,000 people.

The majority of the noncarcinogenic risk levels, or the hazard index, estimated at 1.4, is from manganese. However, there is no documented use of manganese at the site, and the levels of manganese in soil are within the background range of

Human Health and Ecological Risk Assessments

Human health risk assessments for all the sites, and an ecological risk assessment for Site 25, were conducted to determine whether environmental cleanup was necessary. The ecological risk assessment conducted at Site 25 was performed because of the presence of suitable wildlife habitats along parts of the drainages. For an overview and results of the ecological risk assessment for Site 25, please see the site-specific writeup on page 5.

Identifying Human Health Exposure Pathways

To assess the potential human health risks, information on the types and amounts of chemicals at ground surface and in the soil beneath the sites was collected during the environmental field investigations. The next step identified possible exposure pathways, which show how people could come into contact with the chemicals. Possible exposure pathways examined for the chemicals at the surface and in shallow soil at the eleven sites were ingestion of soil, inhalation of vapors and dust, and direct contact with the skin. The risk assessment assumes people are living at a site for a period of 30 years. Finally, the possible health effects from exposure to chemicals were evaluated and combined with other information to estimate potential health risks if the chemicals remain at the sites.

Are the conditions at the sites protective of human health and the environment?

Yes. The human health risk assessments, and the ecological risk assessment at Site 25, determined that the type and the concentrations, or amount of chemicals found at the eleven sites, do not pose a significant risk to any potential future resident living on the sites or to wildlife at Site 25.

Estimating Human Health Risks

The health risks associated with exposure to and toxicity of chemicals were estimated for cancer-causing (carcinogenic) and noncancer-causing (noncarcinogenic) effects. The cancer risk is expressed in terms of the chances of humans contracting cancer as a result of being exposed to the various chemicals from the sites for 30 years.

In a human health risk assessment, U.S. EPA guidance requires that the Marine Corps look at various ways the public could be exposed to chemicals and the risks associated with exposures to the chemicals. For carcinogens, potential risk is expressed in terms of the probability of an individual contracting cancer (cancer

risk level). This probability is expressed as the number of additional cancer cases that would occur within a population, and it is calculated assuming an individual has an extended exposure to the chemicals. The term “additional cancer cases” refers to those cancer cases that could occur in addition to the cases that would otherwise occur in a population not exposed to site chemicals. To manage carcinogenic risk and protect public health, the U.S. EPA has set the following protective risk ranges: greater than one additional cancer case in a population of 10,000 is unacceptable; one additional cancer case in a population of 10,000 to one additional cancer case in a population of 1,000,000 is generally acceptable; and less than one cancer case in a population of 1,000,000 is acceptable.

For noncarcinogenic risks, also expressed as a hazard index, the U.S. EPA considers a hazard index of less than 1 as protective of human health. A hazard index of 1 indicates that lifetime exposure to the chemical(s) has

limited potential for causing adverse health effects (e.g., respiratory distress). A site with a hazard index greater than 1 does not by itself require cleanup action but indicates the need to take into account the types of chemicals, historical activities, and potential toxic effects of the chemicals of potential concern.

Finally, estimates of potential carcinogenic and noncarcinogenic risks are based on conservative assumptions. These assumptions provide for a margin of safety to protect the public and lead to an overestimation of potential risk. Calculated risk levels therefore are an indication of potential risks, and not an absolute prediction that risk will occur at a certain level.

Risk Assessment Results

Based on the results of soil investigations, surface water tests, and human health risk assessments, the eleven IRP sites pose no significant carcinogenic risk to possible future residents.

The health risk values used to make this determination were based on the assumption of future residential use of the property.

The hazard indexes for most of the sites were determined to be less than or equal to 1.4 under the residential land use scenario. The exceptions are Site 10 and Site 21. Upon closer examination, the higher hazard indexes are primarily due to the presence of manganese, a naturally occurring metal in the soil. Additionally, it was determined that manganese levels at the sites fall within the naturally occurring range for this metal (background level). Manganese concentrations reflect the natural variation in the concentration of this metal both on and off the Station, and not contamination resulting from past activities at the Station. The Marine Corps has determined, therefore, that a hazard index greater than 1 is acceptable at these eleven sites. The regulatory agencies, U.S. EPA and Cal-EPA, after review of the field data and risk assessments calculations, concur with the Marine Corps' determination.

The Marine Corps is currently monitoring the stormwater in the Site 25 drainages and is complying with its stormwater runoff discharge permit from the Santa Ana Regional Water Quality Control Board. As a result, the Marine Corps is proposing no cleanup action be taken at Site 25.

The detailed results of the risk assessments are presented in reports currently available for public review in the Information Repository. For additional information on these reports, please see the sidebar on the enclosed insert page.

Conclusions

On the basis of the results of the human health risk assessment for each site, as well as the ecological risk assessment for Site 25, the Marine Corps has determined that current conditions are protective of human health and the environment, and propose that no cleanup action is necessary. The U.S. EPA and Cal-EPA have reviewed the risk assessment results and they concur with this proposal.

Are no further action decisions warranted at the sites?
Yes. Because the relatively low levels of contamination are considered safe by Federal guidelines. Therefore, cleanup actions are not warranted.

manganese in the vicinity of MCAS El Toro. Therefore, the Marine Corps has concluded that the noncarcinogenic risk at this site is acceptable, and no cleanup action is proposed.

Site 6 – Drop Tank Area No. 1

The site is comprised of a wash area, an adjacent drainage ditch with a catch basin, and an area where jet fuel tanks were stored after they were washed. Between 1969 and 1983, water used to rinse out the fuel tanks flowed across a concrete pad and onto an adjacent vegetated area. Soil contaminants reported at the site include VOCs, SVOCs, TPH, and metals.

Based on the risk calculations, this site does not pose a signif-

icant human health risk. The cancer risk calculated for this site is considered generally acceptable by the U.S. EPA, and, therefore, no cleanup action is proposed. Potential cancer risks, for residents exposed to the soil at the site over 30 years, do not exceed 2 additional cases per 100,000 people.

The majority of the noncarcinogenic risk levels, or the hazard index, estimated at 1.4, is from manganese. However, there is no documented use of manganese at the site, and the levels of manganese in soil are within the range of naturally occurring variation of manganese in the vicinity of MCAS El Toro. Therefore the Marine Corps has concluded that the noncarcinogenic risk at this site is acceptable, and no cleanup action is proposed.

Site 9 – Crash Crew Pit No. 1

The site was used for firefighter training between 1965 and 1971, when liquids were ignited and extinguished in unlined pits for fire and rescue training purposes. Soil contaminants reported at the site include VOCs, SVOCs, TPH, and metals.

Based on the risk calculations, this site does not pose a significant human health risk. The cancer risk for this site is considered generally acceptable by the U.S. EPA, and, therefore, no cleanup action is proposed. Potential cancer risks, for residents exposed to the soil at the site over 30 years, do not exceed 2 additional cases per 100,000 people.

The majority of the noncarcinogenic risk levels, or the hazard index, estimated at 1.4, is from manganese. However, there is no documented use of manganese at the site, and the levels of manganese in soil are within the background range of manganese in the vicinity of MCAS El Toro. Therefore, the Marine Corps has concluded that the noncarcinogenic risks at this site are acceptable, and no cleanup action is proposed.

Site 10 – Petroleum Disposal Area

At this site, used crankcase oil, antifreeze, hydraulic and transmission fluids, and solvents were temporarily stored and applied to the ground for local dust control. Soil contaminants reported at the site include VOCs, SVOCs, TPH, and metals.

Based on the risk calculations, the site does not pose a significant human health risk. The cancer risk calculated for this site is considered generally acceptable by the U.S. EPA, and, therefore, no cleanup action is proposed. Potential cancer risks, for residents exposed to the soil at the site over 30 years, do not exceed 4 additional cases per 100,000 people.

The majority of the noncarcinogenic risk levels, or the hazard index, estimated at 2.2, is from manganese and arsenic. There is no documented use of manganese or arsenic at the site, and the presence of arsenic may indicate its use for agricultural or pest-control purposes prior to the construction and expansion of the Station. Since the levels of manganese and arsenic in soil are within the background range of these metals in the vicinity of MCAS El Toro, the Marine Corps has concluded that the noncarcinogenic risk posed by manganese and arsenic at the site is acceptable. Therefore, no cleanup action is proposed.

Site 13 – Oil Change Area

This site was a vehicle maintenance area where used crankcase oil was drained onto the ground. Chemicals reported in the soil include VOCs, SVOCs, TPH, metals, and pesticides.

The results of the risk calculations indicate that this site does not pose a significant human health risk. The cancer risk for this site is considered generally acceptable by the U.S. EPA, and, therefore, no cleanup action is proposed for this site. Potential cancer risks, for residents exposed to the soil at the site over 30 years, do not exceed 3 additional cases per 100,000 people.

The majority of the noncarcinogenic risk levels, or the hazard index, estimated at 1.1, is from manganese. However, there is no documented use of manganese at the site, and the levels of manganese in soil are within the background range of manganese in the vicinity of MCAS El Toro. Therefore, the Marine Corps has concluded that the noncarcinogenic risk at this site is acceptable, and no cleanup action is proposed.

Site 15 – Suspended Fuel Tank Area

The site included a hazardous waste storage area, and a wash rack that was used for heavy equipment maintenance. Soil contaminants reported at the site include polynuclear aromatic

hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, TPH, and metals.

As with the other sites, Site 15 does not pose a significant human health risk. The cancer risk calculated for this site is considered generally acceptable by the U.S. EPA, and, therefore, no cleanup action is proposed. Potential cancer risks, for residents exposed to the soil at the site over 30 years, are less than 1 additional case per 100,000 people.

The majority of the noncarcinogenic risk levels, or the hazard index, estimated at 1.1, is from manganese. However, there is no documented use of manganese at the site, and the levels of manganese in soil are within the background range in the vicinity of MCAS El Toro. Therefore, the Marine Corps has concluded that the noncarcinogenic risk at this site is acceptable, and no cleanup action is proposed.

Site 19 – Aircraft Expeditionary Refueling Site

Between 1964 and 1986, this site was used to store fuel bladders (portable fuel tanks). In 1986, one bladder ruptured spilling jet fuel onto the ground. As a spill response, the impacted soil was excavated and disposed of at a permitted off-Station facility. Soil contaminants included VOCs, SVOCs, TPH, and metals.

Because the impacted soil has been removed, this site does not represent a significant human health risk. The cancer risk calculated for this site, after the soil was removed, is considered generally acceptable by the U.S. EPA, and, therefore, no cleanup action is proposed. Potential cancer risks, for residents exposed to the soil at the site over 30 years, do not exceed 2 additional cases per 100,000 people.

The hazard index is estimated to be less than 1 indicating that noncancer risks are unlikely to occur, and thus, no cleanup action is proposed.

Site 20 – Hobby Shop

This site is comprised of an outside service area and a drainage ditch with a catch basin. The site is used to service private vehicles. Soil contaminants reported at the site include VOCs, SVOCs, TPH, pesticides, and metals.

Based on the risk calculations, this site does not pose a significant human health risk. The cancer risk calculated for this site is considered generally acceptable by the U.S. EPA, and, therefore, no cleanup action is proposed. Potential cancer risks, for residents exposed to the soil at the site over 30 years, do not exceed 2 additional cases per 100,000 people.

The majority of the noncarcinogenic risk levels, or the hazard index, estimated at 1.3, is from manganese. However, there is no documented use of manganese at the site, and the levels of manganese in soil are within the background range of manganese in the vicinity of MCAS El Toro. Therefore, the Marine Corps has concluded that the noncarcinogenic risk at this site is acceptable, and no cleanup action is proposed.

CONTINUED ON PAGE 5 ►

Site 21 – Materials Management Group

The site is a fenced storage yard and a catch basin. The yard was used to store hazardous materials, including oils, paints, solvents, herbicides, and pesticides. Soil contaminants reported at this site include VOCs, SVOCs, TPH, pesticides, herbicides, and metals.

The catch basin has been cleaned up under the Station's environmental maintenance program. The cancer risk calculations for the storage yard are considered generally acceptable by the U.S. EPA. Therefore, no cleanup action is proposed for the site. Potential cancer risks, for residents exposed to the soil at the site over 30 years, do not exceed 3 additional cases per 100,000 people.

The majority of the noncarcinogenic risk levels, or the hazard index, estimated at 2, is from manganese, arsenic, and the herbicide MCP. There is no documented use of manganese or arsenic at the site, and the presence of arsenic may indicate its use for agricultural or pest-control purposes prior to the construction and expansion of the Station. Since the levels of manganese and arsenic in the soil are within the background ranges of these metals in the vicinity of MCAS El Toro, the Marine Corps has concluded that the noncarcinogenic risk represented by manganese and arsenic at the site is acceptable. The presence of the herbicide at the site is also acceptable because it was found in only one soil sample. Based on this information, no cleanup action is proposed.

Site 22 – Tactical Air Fuel Dispensing System

This site is comprised of two former aircraft fuel storage and dispensing areas where spills were reported in the past. Soil contaminants reported at the site include VOCs, SVOCs, TPH, pesticides, and metals.

Although there were past spills of fuels, the site does not pose a significant human health risk. The cancer risk calculated for this site is considered generally acceptable by the U.S. EPA, and, therefore, no cleanup action is proposed. Potential cancer risks, for residents exposed to the soil at the site over 30 years, do not exceed 4 additional cases per 100,000 people.

The majority of the noncarcinogenic risk levels, or the hazard index, estimated at 1.2, is from manganese. However, there is no documented use of manganese at the site, and the levels of manganese in soil are within the background range of manganese in the vicinity of MCAS El Toro. Therefore, the Marine Corps has concluded that the noncarcinogenic risk at this site is acceptable, and no cleanup action is proposed.

Site 25 – Drainage Areas (Agua Chinon Wash, Bee Canyon Wash, Borrego Canyon Wash, and Marshburn Channel)

The site is composed of four major drainage channels that flow through and adjacent to the Station. The channels are usually dry, except during storm events. Storm-runoff that flows from the surrounding hills and irrigated farmland combine with Station runoff. This combined storm runoff then flows off-Station and into San Diego Creek (see Figure 1). The channels were evaluated as a potential source of the regional VOC groundwater contamination. However, the results of the remedial investigation indicate that these channels are not the source of the contamination. Contaminants reported in the sediments within the drainages include pesticides and metals.

Based on the results of the risk calculations, potential cancer risks for residents exposed to the sediment over 30 years is less than 1 additional case per 1,000,000 people, and, thus, is considered acceptable by the U.S. EPA. The noncarcinogenic risk levels or hazard index is less than 1. Based on the carcinogenic and noncarcinogenic risks at the site, no cleanup action is proposed.

Identifying Potential Ecological Risks

An assessment of the potential hazards to ecological receptors (wildlife) at Site 25 was performed. Sample analysis provided site-specific chemical concentrations in sediment in the drainages. The potential exposure pathways identified for the wildlife were ingestion of chemicals in the sediment, ingestion of plant and animal tissues exposed to chemicals in the sediment, and inhalation of vapors.

Ecological risks are expressed in terms of a hazard index. Hazard indexes over 1 indicate a potential for adverse effects on wildlife, but no adverse effects are expected for a hazard index less than 1.

Ecological Risk Assessment Results

No adverse impacts to the wildlife in the drainages are expected to occur at Site 25. Chemical levels at Borrego Canyon Wash and Agua Chinon Wash are at or below background levels. Ecological hazard indexes at Bee Canyon Wash were estimated at less than 1.

At Marshburn Channel, potential risk to plants and wildlife is estimated to exceed 1. The majority of the ecological hazard indexes is due to pesticides (DDT and DDE). The concentrations of DDT and DDE in this channel are within the background range of pesticides in the vicinity of MCAS El Toro. The channel is also shallow and concrete-lined with little vegetation, resulting in a low quality habitat for wildlife.

Based on the results of the ecological risk assessment at Site 25, the Marine Corps has concluded that the risk to wildlife in all four drainages is not significant, and no cleanup action is proposed.

The Next Step

Public comments on this Proposed Plan received during the period of June 16 to August 16, 1997 will be considered in the final determination for the sites. Responses to all significant comments will be addressed in a Responsiveness Summary. The Responsiveness Summary will be part of the Record of Decision, which will formally document the specific environmental determination for Sites 4, 6, 9, 10, 13, 15, 19, 20, 21, 22, and 25.

MCAS El Toro – Installation Restoration Program Process

<i>Site Discovery</i>	<i>NPL Listing/ Federal Facilities Agreement Signed</i>	<i>Remedial Investigation (RI)</i>	<i>Proposed Plan/ Public Comment Period</i>	<i>Responsiveness Summary/Record of Decision</i>
COMPLETED			WE ARE HERE	TO BE DONE
Potential contamination was initially assessed in 1985.	The Station was placed on U.S. EPA's National Priorities List in February 1990.	The RI identified the sources and areas of contamination, and evaluated potential risks.	The public now has the opportunity to comment on the proposed No Further Action plan.	The Marine Corps will document the No Further Action plan for the sites in the Record of Decision.

Multi-Agency Environmental Team Concurs with No Further Action Proposal

With operational closure of MCAS El Toro scheduled for July 1999, the Marine Corps has formed a team with the U.S. Environmental Protection Agency and the California Environmental Protection Agency to coordinate the Installation Restoration Program (IRP) at the Station.

The primary goals of this Base Realignment and Closure Cleanup Team are to protect human health and the environment and to expedite the environmental cleanup of the Station. The team also serves as the primary forum for assessing cleanup priorities and progress, and obtaining consensus on issues regarding the Station's environmental activities.

The team completed its review of the Draft Remedial Investigation Reports for the sites. Discussions were held regarding the conclusions of the investigations, the risk assessments, and the recommendations presented by the Marine Corps. The regulatory agencies concur with the Marine Corps' proposal that no cleanup action is required at these sites.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) requires that cleanup actions meet applicable or relevant and appropriate requirements (ARARs). ARARs consist of all federal, state, and local environmental and health standards and requirements specific to a site recommended for cleanup action. The intent of meeting ARARs is to select and implement cleanup actions that are protective of human health and the environment in accordance with other regulatory requirements. Because no cleanup actions are proposed for the eleven IRP sites, ARARs were not identified.

The community-based MCAS El Toro Restoration Advisory Board has recently reviewed and commented on the Draft Remedial Investigation Reports, including the risk assessments. This community-based group is made up of local agencies and members of the public. If you are interested in becoming a member of the Restoration Advisory Board, please complete the mailing coupon.

Investigation Reports and Risk Assessment Results Available for Review and Comment

The collection of reports and documents used by the Marine Corps in the selection of cleanup or environmental management alternatives is the Administrative Record (AR). The AR provides a record of decisions and actions taken by the Marine Corps. A site-specific AR has been compiled for the sites discussed in this Proposed Plan. It includes the Phase I Remedial Investigation Draft Technical Memorandum, May 1993; the Draft Final Phase II Remedial Investigation Report for Operable Unit 3A (Sites 4, 6, 9, 10, 13, 15, 19, 20, 21, and 22), June 1997; the Draft Final Phase II Remedial Investigation/Feasibility Study Addendum Site 25 – Major Drainages, May 1997; and the U.S. Environmental Protection Agency's guidance for conducting risk assessments and selecting No Further Action alternatives. This AR is available for public review and comment through August 16, 1997.

Relevant documents that pertain to these sites (within Operable Unit 3A) and a complete index of all MCAS El Toro Administrative Record documents are housed in the Information Repository at the Heritage Park Regional Library, 14361 Yale Avenue in Irvine, (714) 551-7151.

The complete collection of documents listed in the index is also available for review at MCAS El Toro. To arrange a time to review documents at the Station during the comment period, contact Joseph Joyce at (714) 726-3470.

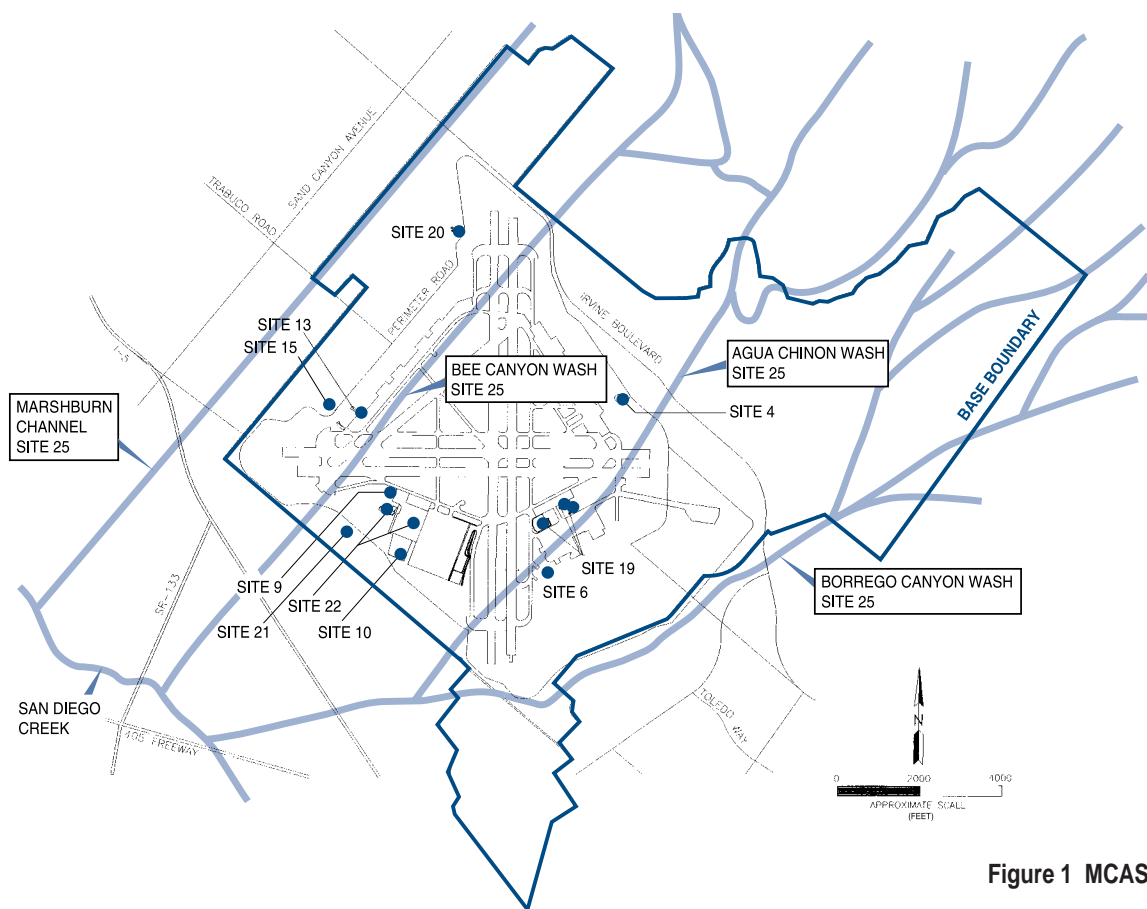


Figure 1 MCAS El Toro

Definitions of Chemical Terms*

■ VOCs (volatile organic compounds) make up a general category of organic (carbon-containing) compounds that evaporate easily at room temperature. They are commonly used for machinery and parts degreasing, paint stripping, and other industrial operations. At MCAS El Toro, historical activities have included more than 40 years of aircraft maintenance that used industrial solvents, like trichloroethene (TCE), that are categorized as VOCs. Within the category of VOCs, there are known cancer-causing compounds.

■ Another general category of organic compounds is SVOCs (semivolatile organic compounds). These compounds evaporate at a slower rate than VOCs. As with VOCs, there are known cancer-causing compounds within the category of SVOCs.

■ PCBs (polychlorinated biphenyls) are a specific class or group of SVOCs and are known as cancer-causing compounds.

■ TPH (total petroleum hydrocarbons) are chemical

components of fuels. The individual compounds that make up TPH are evaluated for potential health effects. VOCs and SVOCs are examples of the compounds found in TPH. TPH compounds are managed outside the CERCLA program.

■ PAH (polynuclear aromatic hydrocarbons) are a specific class or group of SVOCs, and some are cancer-causing compounds.

■ Metals found at the sites include arsenic, beryllium, cadmium, chromium, mercury, vanadium, and manganese. Arsenic, chromium, and beryllium are known to cause cancer. Manganese and mercury are noncancer-causing chemicals that can affect both the respiratory and nervous systems. Arsenic, cadmium, chromium, vanadium, and manganese are found in the soils native to areas around the Station.

■ Pesticides and herbicides were used to control insects and vegetation. Depending on the specific chemicals used for this purpose, they could be cancer-causing or noncancer-causing.

**The low level concentrations of chemicals found at these sites do not pose a significant risk to human health and the environment.*

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(Please see coupon on back page)

Where to Get More Information

Copies of Remedial Investigation Reports, including the human health risk assessments and other key documents relating to environmental activities at MCAS El Toro, are available for public review at this Information Repository: **Heritage Park Regional Library, 14361 Yale Avenue, Irvine, California 92714; (714) 551-7151**. Current hours of operation: Monday – Thursday 10 a.m. to 9 p.m.; Friday – Saturday 10 a.m. to 5 p.m.; and Sunday 12 p.m. to 5 p.m.

The Marine Corps encourages community involvement in the decision-making process of the environmental restoration program at MCAS El Toro. If you have any questions or concerns about environmental activities at the Station, please feel free to contact any of the following project representatives:

Mr. Joseph Joyce

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Commanding General
AC/S, Environment (1AU)
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(714) 726-3470

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MAILING LIST COUPON

If you would like to be on the mailing list to receive information about environmental restoration activities at MCAS El Toro, please complete the coupon below and mail to: Commanding General, AC/S, Environment, (1AU), Attn: Mr. Joseph Joyce, IRP Department, MCAS El Toro, P.O. Box 95001, Santa Ana, CA 92709-5001.

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☐ Send me information on Restoration Advisory Board membership.

Name _____

Street _____

City _____ State _____ Zip Code _____

Affiliation (optional) _____ Telephone _____

Commanding General
Attn: Mr. Joseph Joyce
BRAC Environmental Coordinator
AC/S, Environment (1AU)
MCAS El Toro
P.O. Box 95001
Santa Ana, CA 92709-5001

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